1854MNRAS..14..167S

Extract of a Letter from W. C. Bond, Esq., to the Editor.

"Perhaps I ought to have informed you earlier, that on the 28th of November I received a letter from Mr. Robt. Van Arsdale, of Newark, New Jersey, in which he says, under date of November 25th, as follows:—

"'I noticed a comet last evening in the constellation *Cassiopeiæ:* it is small, round, and bright, in a refractor of $6\frac{3}{8}$ inches aperture. Its approximate place, Nov. 25, at $6^h\ 50^m$ Newark mean solar time, was, right ascension, $2^h\ 7^m$; north declination, 60° 12'.'

"This comet was subsequently observed several times by Mr. Van Arsdale and by ourselves; and is no doubt the same seen by M. Klinkerfues on the 2d of December. Inclosed you will find our observations on this comet. Of late we have been too busily engaged in other matters, particularly in reducing zones of small stars, which we had observed by the electric method, to give much of our attention to comets.

Observations on Van Arsdale's Comet, made at the Observatory of Harvard College.

	Camb. M.S.T.	$\Delta\alpha$, Comet − ✱	$\Delta\delta$, Comet − ✱	
	h m s	m s	' "	
1853, Dec. 14	12 52 28·4	−1 24·24	−7 8·1	*a*
15	6 51 23·9	+1 16·74	+6 14·3	*b*
24	7 32 24·2	+0 16·63	+2 30·7	*c*
27	7 0 46·8	+0 2·15	+5 0·5	*d*
1854, Jan. 2	7 8 58·8	+0 42·50	+6 13·6	*e*

Mean Places of the Stars of Comparison referred to the Mean Equinox of the beginning of the years 1853 and 1854.

Star	α 1853·0	δ 1853·0	Authority.
	h m s	h m s	
a	1 15 17·01	+26 56 48·1	B.A.C. 409
b	1 12 10	35 59	Approximate 9th mag.
c	1 6 40	26 36	— —
d	1 5 46·42	23 48 17·7	B.A.C. 365
e	1 4 33·35	+18 57 48·0	10th mag. comp. with B.A.C. 336

"*Harvard College Observatory, Cambridge,*
Feb. 16, 1854."

Extract of a Letter from M. Otto Struve to the Astronomer Royal, dated January 17, 1854.

"You will see by the enclosed paper that our Academy has resolved to propose the theory of Biela's Comet as a prize problem. Be pleased to insert our programme in the *Monthly Notices.* On that occasion it might be mentioned that all stars used formerly for comparison with the comet, and the positions of which appear not to be sufficiently ascertained, will be reobserved during the present

Downloaded from http://mnras.oxfordjournals.org/ at Bibliotheque de l'Universite Laval on July 12, 2015

© Royal Astronomical Society • Provided by the NASA Astrophysics Data System

year with our meridian circle. A part of the work is already done."

The following is the programme alluded to by M. Otto Struve:—

Programme of a Prize for Astronomy proposed by the Imperial Academy of Sciences of St. Petersburg, at their Sitting on the 29th of March, 1853.

The disruption of the comet of Biela into two bodies apparently separated by an empty space is a unique event in the annals of astronomy. This catastrophe, which occurred in 1846, almost under the eyes of astronomers, has been followed by extraordinary changes in the aspect and brightness of the two heads. Analogous changes were again exhibited on the occasion of the return of the comet in 1852, notwithstanding the considerable augmentation of the mutual distance of the two heads. They indicate, according to all appearance, the continued existence of a mutual action of a very remarkable character. All these circumstances concur to render the comet of Biela an object of the very highest scientific interest. Further, it is to be remarked that, on the occasion of the last apparition of the comet in 1852, the observed positions have differed enormously from the ephemeris calculated beforehand by Sig. Santini, and that it is not yet decided whether the differences between theory and observation ought to be attributed solely to the imperfect nature of the calculations, or whether they have been produced by forces which, at the time of the subdivision of the comet, had effected violent alterations in the orbit. Consequently, a vigorous investigation of the orbit of the comet has appeared to the Imperial Academy of Sciences to be worthy of being proposed to the competition of astronomers and geometers, as the subject of an extraordinary prize. Considering that it is impossible, under present circumstances, to foresee all the consequences to which the researches will lead, the Academy does not think that it would be desirable to restrict too rigorously the problem proposed for solution.

The programme is accordingly comprised in the following points:—

1. The Academy demands a rigorous investigation of the elements of the orbit described by the centre of gravity of the comet of Biela; which must be founded on a minute discussion of all the observations obtained during the six apparitions observed between 1772 and 1852, respect being had to the sensible perturbations produced by the planets.

2. In case it may not be possible to represent in a satisfactory manner all the observations by means of a single orbit, it will be necessary to divide the investigation into two parts, one of which will embrace the observations from the earliest period down to the epoch of the separation of the two heads; the other will include all the observations made from that epoch down to the present time.

3. The investigation should be especially directed to the mutual relations of the two heads, in order to determine not only the posi-

Downloaded from http://mnras.oxfordjournals.org/ at Bibliotheque de l'Universite Laval on July 12, 2015

© Royal Astronomical Society • Provided by the NASA Astrophysics Data System